7555-01-P

NATIONAL SCIENCE FOUNDATION

Agency Information Collection Activities: Comment Request; Computer and Information Science and Engineering Research Experiences for Undergraduates Sites and Supplements Evaluation

AGENCY: National Science Foundation.

ACTION: Submission for OMB Review; Comment Request.

SUMMARY: The National Science Foundation (NSF) has submitted the following information collection requirement to OMB for review and clearance under the Paperwork Reduction Act of 1995. This is the second notice for public comment; the first was published in the FEDERAL REGISTER and no comments were received. NSF is forwarding the proposed renewal submission to the Office of Management and Budget (OMB) for clearance simultaneously with the publication of this second notice.

DATES: Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to www.reginfo.gov/public/do/PRAmain. Find this particular information collection by selecting “Currently under 30-day Review – Open for Public Comments” or by using the search function.

FOR FURTHER INFORMATION, CONTACT: Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, VA 22314, or send email to splimpto@nsf.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339, which is accessible 24 hours a day, 7 days a week, 365 days a year (including federal holidays). Comments regarding this information collection are best assured of having their

full effect if received within 30 days of this notification. Copies of the submission(s) may be obtained by calling 703-292-7556.

NSF may not conduct or sponsor a collection of information unless the collection of information displays a currently valid OMB control number, and the agency informs potential persons who are to respond to the collection of information that such persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

SUPPLEMENTARY INFORMATION:

Title of Collection: Computer and Information Science and Engineering Research Experiences for Undergraduates Sites and Supplements Evaluation.

OMB Approval Number: 3145-NEW.

Type of Request: Intent to establish an information collection.

Abstract: Every year the National Science Foundation (NSF) funds hundreds of Research Experience for Undergraduates (REU) activities through its REU program. The Directorate of Computer and Information Science and Engineering (CISE) is seeking to evaluate the effectiveness of the CISE REU program.

The REU program provides undergraduate students at US higher education institutions with opportunities to work with faculty on a research project. They can take the form of REU Sites or REU Supplements. REU Sites are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Supplements are included as a component of proposals for new or renewal NSF grants or cooperative agreements or may be requested for ongoing NSF-funded research projects.

By offering this opportunity to undergraduate students, the REU program seeks to expand student participation in all kinds of research — both disciplinary and interdisciplinary — encompassing efforts by individual investigators, groups,

centers, national facilities, and others. The REU experience integrates research and education to attract a diverse pool of talented students into careers in science and engineering, including teaching and education research related to science and engineering.

The current data collection project intends to measure the impact of the undergraduate REU Sites and REU Supplements programs sponsored by NSF CISE. The project will conduct online surveys to track NSF CISE REU participants over time – including pre-program, post-program and one-year post-program measurement -- alongside two comparison groups: (1) students participating in other undergraduate research, and (2) students who do not participate in research. The researchers will supplement REU participants' survey data with basic REU information and perceptions of impact from NSF CISE REU Principal Investigators (PIs). The evaluation and research questions guiding this project include the following:

1. Who are the students reached through the NSF REU Program, and how do they compare to students participating in other types of research experiences and to students in the broader CISE community?
2. How do CISE REU Sites and REU Supplements differ from other research experiences (e.g., other REUs, internships, and independent research projects)?
3. To what extent are the goals of the NSF REU Program being met by the individual projects within the program, including recruitment and retention of students in science and engineering fields and increasing diversity in these fields?
4. In what ways does participation in REU Sites, REU Supplements, internships, and/or other independent research experiences impact

student attitudes and pathways to CISE careers and other research experiences?

5. In what ways does participation in the REU Sites and REU Supplements impact recruitment and retention of students who are underrepresented in computing?

Ultimately, the findings from this data collection will be used to understand and improve the impact of the CISE REU program, including increasing recruitment and retention in science and engineering and promoting a diverse group of computing/STEM careers.

Use of the information: The information collected through this survey will be used to evaluate the NSF CISE REU Program.

Respondents: There will be four types of respondents: NSF CISE REU Site and Supplement participants, a comparison group of undergraduate students who participate in other, non-NSF REU research experiences, a comparison group of undergraduate students who do not participate in research, and NSF CISE REU PIs.

NSF CISE REU participants will include undergraduate students who participate in REU projects in which the project's Principal Investigator chooses to use NSF-sponsored program evaluation services. Participants from the two comparison groups will be identified and recruited from a pool of undergraduates in computing fields who have participated in a prior survey of the Computing Research Association and have agreed to be contacted for future data collection. The participating NSF CISE REU PIs will also complete PI REU Information Forms at the beginning and end of their REUs.

Estimated number of respondents: The study's data collection activities will occur over a span of 2 1/3 years. It is estimated that during this time, there will be

approximately 2,333 NSF CISE REU survey respondents, 2,000 comparison group survey respondents, and 233 NSF CISE REU PI Information Form respondents, for a total of 4,566 respondents.

Average time per reporting: Each online survey for REU participants and comparison group respondents is designed to be completed in 20 minutes or less. Each REU PI Information Form is designed to be completed in 10 minutes or less.

Frequency: Each NSF CISE REU participant will be asked to complete three surveys: (1) a pre-test before they begin their REU project; (2) a post-test, after their REU ends; and (3) a one-year follow-up survey. Within the data collection timeline for this project, this will allow for two full data collection cycles, plus a third subset of Year 3 summer REU participants who will only complete a pre-test and a post-test, but no follow-up survey. Each comparison group participant, including both those with a different research experience and those with no research experience, will be asked to complete a pre-test survey and a follow-up survey occurring approximately one year later. There will be two full data collection cycles for comparison group participants. Each NSF CISE REU PI will complete a Time 1 PI REU Information Form before their REU begins and a Time 2 REU PI Information Form when their REU ends.

Estimate burden on the public: For REU participants, in the 2 1/3 years of data collection, there will be two cohorts of complete data collection (pre-test, post-test, and follow-up) and one cohort with a partial data collection cycle (pre-test and post-test only). Based on an expected 1,000 REU participant respondents per year, It is expected that a total of approximately 2,333 REU respondents will complete a 20-minute pre-survey in the project. Of these 2,333 REU participant respondents, we expect that approximately 70%, or 1,633, will complete a 20-

minute post-survey. For the follow-up survey, only the REU participants from the first two years of the data collection would be able to complete the survey within the time range of the study (N = 2,000). It is expected that approximately 50% of these respondents, or 1,000, will complete a 20-minute one-year follow-up survey. This would result in a total of 4,966 20-minute surveys completed by REU respondents, for a total of 1,655 burden hours for this subset of respondents.

For comparison group participations, there will be two cohorts with full cycles of data collection (pre-test and follow-up). It is expected that a total of 2,000 respondents will complete a 20-minute pre-survey in the project. Of these 2,000 comparison group respondents, approximately 50%, or 1,000, are expected to complete a 20-minute one-year follow-up survey. This would result in a total of 3,000 surveys completed by comparison group respondents, for a total of 1,000 burden hours.

For REU PIs, there will be 2 1/3 years of complete data collection (Time 1 and Time 2 REU PI Information Forms). Based on an expected 100 NSF CISE REU PIs choosing to receive evaluation services each year, It is expected that a total of approximately 233 REU PIs will complete both the Time 1 and Time 2 PI REU Information Forms (each one takes 10 minutes to complete). This would result in a total of 466 10-minute forms completed by REU PIs, for a total of 77.67 burden hours for this subset of respondents.

Together, the total estimated survey burden for the project is 2,733 hours. The calculations are show/n in Table 1.

Table 1. Estimated Survey Burden

Category of Respondent	Number of Cohort 1 Responses	Number of Cohort 2 Responses	Number of Cohort 3 Responses (Partial Year)	Participation Time	Burden

REU participant Pre-survey	1,000	1,000	333	20 mins each	777.67 hours
REU participant Post-survey (70% of original)	700	700	233	20 mins each	544.33 hours
REU participant Follow-up survey (50% of original)	500	500	Not conducted	20 mins each	333.33 hours
Comparison participant Pre-survey	1,000	1,000	Not conducted	20 mins each	666.67 hours
Comparison participant Follow-up survey (50% of original)	500	500	Not conducted	20 mins each	333.33 hours
REU PI Time 1 Information Form	100	100	33	10 mins each	777.67 hours
REU PI Time 12Information Form	100	100	33	10 mins each	544.33 hours
Total surveys completed	**3,900**	**3,900**	**632**	466 @ 10 min 7,966 @ 20 mins	**2,733 hours**

COMMENTS: Comments are invited on:

1. Whether the proposed collection of information is necessary for the evaluation of the CISE REU Sites and Supplements Program
2. The accuracy of the NSF's estimate of the burden of the proposed collection of information
3. Ways to enhance the quality, utility, and clarity of the information on respondents, including through the use of automated collection techniques or other forms of information technology

Dated: January 12, 2022.

Suzanne H. Plimpton,

Reports Clearance Officer,

National Science Foundation.

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